

A CRITICAL TEST OF HOT B STAR SEISMOLOGY WITH KEPLER

Pieter Degroote
Catholic University of Leuven
GO40024

This proposal aims to understand what is going on in hot pulsating B stars in the Kepler FoV, by observing one carefully selected very bright known variable, with a B1 spectral type, making it the earliest spectral type observed with Kepler. Monitoring this target during one year will deliver the best photometric data sets available for the modelling of any hot B star in terms of duration and signal-to-noise. We shall perform simultaneous high-precision high-resolution spectroscopic measurements with the HERMES spectrograph at the Mercator telescope, to which we have guaranteed access. There is no risk attached to our proposal, given that the stars are known to be variable at mmag level. We are thus sure to have a variable hot B star, a primer for Kepler. In order to identify the dominant observed modes, we shall set up a long-term high-resolution spectroscopy campaign with the HERMES spectrograph attached to the 1.2m Mercator situated at La Palma, Canary Islands, to which we have permanent access. Our proposal is very relevant for the improvement of massive star models and will therefore have a large impact on that field of stellar evolution, as well as on any topic in astrophysics that relies on it.